

In re Patent Application of:

ROY

Serial No. 10/777,871

Filing Date: February 12, 2004

In the Claims:

This listing of claims replaces all prior versions and listing of claims in the application.

1. (Previously Presented) A communications system comprising:

a plurality of mobile wireless communications devices each comprising a respective software client using at least one of a plurality of different operating protocols as configuration commands and instructions for accessing electronic mail (email) to send at least one access request;

a plurality of email data storage devices for storing email data files, each email data file being associated with a respective mobile wireless communications device, each email data file having a unique identification (UID) associated therewith, and each email data storage device using at least one of the plurality of different operating protocols; and

a protocol interface device comprising

a protocol converter module for communicating with the respective software client of each of said plurality of mobile wireless communications devices using respective operating protocols thereof, and

a protocol engine module for communicating with said plurality of email data storage devices using respective operating protocols thereof,

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 said protocol engine module also for initiating polling of said email data storage devices for UIDs of email data files stored thereon to maintain a UID list, and for cooperating with said protocol converter module to provide the UID list to the respective software client of each of said plurality of mobile wireless communications devices upon receiving access requests therefrom, the UID list being provided by the protocol engine module independent of respective ones of the email data files,

 said protocol engine module also initiating polling for a given one of said plurality of mobile wireless communications devices without initiated configuration commands and instructions from said software client thereof, and irrespective of communications with said given mobile wireless communication device.

2. (Previously Presented) The communications system of Claim 1 wherein said protocol engine module detects new email data files stored on said email data storage devices based upon UIDs thereof, and wherein said protocol engine module cooperates with said protocol converter module to send alert notifications to respective mobile wireless communications devices upon detecting new email data files therefor.

3. (Original) The communications system of Claim 1 wherein said protocol interface device further comprises a memory

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coupled to said protocol engine module for storing the UIDs.

4. (Previously Presented) The communications system of Claim 1 wherein said protocol engine module polls said email data storage devices only for UIDs.

5. (Previously Presented) The communications system of Claim 1 wherein said protocol engine module polls said email data storage devices based upon a static polling interval.

6. (Previously Presented) The communications system of Claim 1 wherein said protocol engine module polls said email data storage devices based upon an adaptive polling interval.

7. (Original) The communications device of Claim 1 wherein said protocol converter module and said protocol engine module communicate using a common interface protocol able to represent a desired number of protocol-supported elements for a desired operating protocol.

8. (Original) The communications system of Claim 7 wherein the common interface protocol is based upon a Web-based distributed authoring and versioning (WebDAV) protocol.

9. (Previously Presented) The communications system of Claim 1 wherein said plurality of email data storage devices, said plurality of wireless mobile communications devices, and

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said protocol interface device process email messages.

10. (Original) The communications system of Claim 1 further comprising a wide area network (WAN) connecting at least one of said wireless mobile communications devices with said protocol interface device.

11. (Previously Presented) The communications system of Claim 1 further comprising a wide area network (WAN) connecting at least one of said email data storage devices with said protocol interface device.

12. (Previously Presented) A protocol interface device for interfacing a plurality of mobile wireless communications devices with a plurality of electronic mail (email) data storage devices, the mobile wireless communications devices each comprising a respective software client, and the software clients and email data storage devices each using at least one of a plurality of different operating protocols as configuration commands and instructions for accessing email, and the mobile wireless communications devices for sending at least one access request for accessing email data files stored on the email data storage devices, each email data file being associated with a respective mobile wireless communications device and having a unique identification (UID) associated therewith, the protocol interface device comprising:

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a protocol converter module for communicating with the respective software client of each of the plurality of mobile wireless communications devices using respective operating protocols thereof; and

a protocol engine module for communicating with the plurality of email data storage devices using respective operating protocols thereof;

said protocol engine module also for initiating polling of the email data storage devices for UIDs of email data files stored thereon to maintain a UID list, and for cooperating with said protocol converter module to provide the UID list to the respective software client of each of said plurality of mobile wireless communications devices upon receiving access requests therefrom, the UID list being provided by the protocol engine module independent of respective ones of the email data files;

said protocol engine module also initiating polling for a given one of said plurality of mobile wireless communications devices without initiated configuration commands and instructions from said software client thereof, and irrespective of communications with said given mobile wireless communications device.

13. (Previously Presented) The protocol interface device of Claim 12 wherein said protocol engine module detects new email data files stored on the email data storage devices based upon UIDs thereof, and wherein said protocol engine module cooperates with said protocol converter module to send alert

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notifications to respective mobile wireless communications devices upon detecting new email data files therefor.

14. (Original) The protocol interface device of Claim 12 further comprising a memory coupled to said protocol engine module for storing the UIDs.

15. (Previously Presented) The protocol interface device of Claim 12 wherein said protocol engine module polls said email data storage devices only for UIDs.

16. (Previously Presented) The protocol interface device of Claim 12 wherein said protocol engine module polls said email data storage devices based upon a static polling interval.

17. (Previously Presented) The protocol interface device of Claim 12 wherein said protocol engine module polls said email data storage devices based upon an adaptive polling interval.

18. (Previously Presented) A protocol interface device for interfacing a plurality of communications devices with a plurality of electronic mail (email) data storage devices, the communications devices each comprising a respective software client, and the software clients and email data storage devices each using at least one of a plurality of different operating protocols as configuration commands and instructions for

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accessing email, and the communications devices for sending at least one access request for accessing email data files stored on the email data storage devices, each email data file being associated with a respective communications device and having a unique identification (UID) associated therewith, the protocol interface device comprising:

 a protocol converter module for communicating with the respective software client of each of the plurality of communications devices using respective operating protocols thereof; and

 a protocol engine module for communicating with the plurality of email data storage devices using respective operating protocols thereof;

 said protocol engine module also for initiating polling of the email data storage devices for UIDs of email data files stored thereon, to maintain a UID list, and for cooperating with said protocol converter module to provide the UID list to the respective software client of each of the plurality of communications devices upon receiving access requests therefrom, the UID list being provided by the protocol engine module independent of respective ones of the email data files;

 said protocol engine module also initiating polling for a given one of said plurality of communications devices without initiated configuration commands and instructions from said software client thereof, and irrespective of communications with said given communications device.

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19. (Previously Presented) The protocol interface device of Claim 18 wherein said protocol engine module detects new email data files stored on the email data storage devices based upon UIDs thereof, and wherein said protocol engine module cooperates with said protocol converter module to send alert notifications to respective communications devices upon detecting new email data files therefor.

20. (Original) The protocol interface device of Claim 18 further comprising a memory coupled to said protocol engine module for storing the UIDs.

21. (Previously Presented) The protocol interface device of Claim 18 wherein said protocol engine module polls said email data storage devices only for UIDs.

22. (Previously Presented) The protocol interface device of Claim 18 wherein said protocol engine module polls said email data storage devices based upon a static polling interval.

23. (Previously Presented) The protocol interface device of Claim 18 wherein said protocol engine module polls said email data storage devices based upon an adaptive polling interval.

24. (Previously Presented) A method for interfacing a plurality of mobile wireless communications devices with a

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plurality of electronic (email) data storage devices, the mobile wireless communications devices each comprising a respective software client, and the software clients and email data storage devices each using at least one of a plurality of different operating protocols as configuration commands and instructions for accessing email, and the mobile wireless communications devices for sending at least one access request for accessing email data files stored on the email data storage devices, each email data file being associated with a respective mobile wireless communications device and having a unique identification (UID) associated therewith, the method comprising:

providing a protocol converter module for communicating with the respective software client of each of the plurality of mobile wireless communications devices using respective operating protocols thereof; and

providing a protocol engine module for communicating with the plurality of email data storage devices using respective operating protocols thereof, the protocol engine module also for initiating polling of the email data storage devices for UIDs of email data files stored thereon to maintain a UID list current to within a polling interval, for cooperating with the protocol converter module to provide the UID list to the respective software client of each of the plurality of mobile wireless communications devices upon receiving access requests therefrom, the UID list being provided by the protocol engine module independent of respective ones of the email data files;

the protocol engine module also initiating polling for

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a given one of the plurality of mobile wireless communications devices without initiated configuration commands and instructions from the software client thereof, and irrespective of communications with the given mobile wireless communications device.

25. (Previously Presented) The method of Claim 24 wherein the protocol engine module detects new email data files stored on the email data storage devices based upon UIDs thereof, and wherein the protocol engine module cooperates with the protocol converter module to send alert notifications to respective mobile wireless communications devices upon detecting new email data files therefor.

26. (Previously Presented) The method of Claim 24 wherein the protocol engine module polls the email data storage devices only for UIDs.

27. (Previously Presented) The method of Claim 24 wherein the protocol engine module polls the email data storage devices based upon a static polling interval.

28. (Previously Presented) The method of Claim 24 wherein the protocol engine module polls the email data storage devices based upon an adaptive polling interval.

29. (Currently Amended) A non-transitory computer-

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readable medium having computer executable modules for interfacing a plurality of mobile wireless communications devices with a plurality of electronic (email) data storage devices, the mobile wireless communications devices each comprising a respective software client, and the software clients and email data storage devices each using at least one of a plurality of different operating protocols as configuration commands and instructions for accessing email, and the mobile wireless communications devices for sending at least one access request for accessing email data files stored on the email data storage devices, each email data file being associated with a respective mobile wireless communications device and having a unique identification (UID) associated therewith, the computer-readable medium comprising:

 a protocol converter module for communicating with the respective software client of each of the plurality of mobile wireless communications devices using respective operating protocols thereof; and

 a protocol engine module for communicating with the plurality of email data storage devices using respective operating protocols thereof, the protocol engine module also for initiating polling of the email data storage devices for UIDs of email data files stored thereon to maintain a UID list, and for cooperating with said protocol converter module to provide the UID list to the respective software client of each of said plurality of mobile wireless communications devices upon receiving access requests therefrom, the UID list being provided

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by the protocol engine module independent of respective ones of the email data files, said protocol engine module also initiating polling for a given one of said plurality of mobile wireless communications devices without initiated configuration commands and instructions from said software client thereof, and irrespective of communications with said given mobile wireless communication device.

30. (Currently Amended) The non-transitory computer-readable medium of Claim 29 wherein the protocol engine module detects new email data files stored on the data storage devices based upon UIDs thereof, and wherein the protocol engine module cooperates with the protocol converter module to send alert notifications to respective mobile wireless communications devices upon detecting new email data files therefor.

31. (Currently Amended) The non-transitory computer-readable medium of Claim 29 wherein the protocol engine module polls the email data storage devices only for UIDs.

32. (Currently Amended) The non-transitory computer-readable medium of Claim 29 wherein the protocol engine module polls the email data storage devices based upon a static polling interval.

33. (Currently Amended) The non-transitory computer-readable medium of Claim 29 wherein the protocol engine module

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polls the email data storage devices based upon an adaptive polling interval.